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Leaf Beetles (Coleoptera: Bruchidae, Chrysomelidae, Orsodacnidae) from the George Washington Memorial Parkway, Fairfax County, Virginia

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ABSTRACT

One-hundred and seven species in 60 genera of bruchid, chrysomelid, and orsodacnid leaf beetles were documented from the George Washington Memorial Parkway in Fairfax County, Virginia. Three species (*Chaetocnema irregularis*, *Crepidodera bella*, and *Longitarsus alternatus*) are documented for the first time from the Commonwealth. The study increases the number of chrysomelid leaf beetles known from the Potomac River Gorge to 187 species. New host plant associations are noted for some species. Malaise traps and sweeping or beating vegetation with a hand net proved to be the most successful capture methods. Periods of adult activity based on dates of capture are given for each species.

Key words: Bruchidae, Chrysomelidae, Coleoptera, Fairfax County, leaf beetles, national park, new state records, Orsodacnidae, Virginia.

INTRODUCTION

The Chrysomelidae, or leaf beetles, are the second largest family of phytophagous beetles, with estimates ranging from 37,000 to 50,000 species worldwide, including approximately 1,700 species represented in North America (Lopatin, 1977; Jolivet, 1988; Riley et al., 2002). Larvae and adults feed primarily on leaves of aquatic and terrestrial host plants, but some species specialize on roots, stems, seeds, flowers, pollen, or detritus. Largely because of their feeding habits, but also through the transmission of plant viruses, members of this group include a number of agricultural and horticultural pests. Some intentionally introduced species have become effective biological control agents on invasive non-native plants. While most adults are small (1-10 mm) but boldly patterned and colored, the family also contains hundreds of cryptic species with unknown biological habits. Leaf beetles reach their highest species richness and abundance in open areas having a diverse flora (Greatorex-Davies et al., 1994; Masashi & Nagaike, 2006).

The Bruchidae, considered by some a subfamily of the Chrysomelidae, were given familial status by Kingsolver (1995) based on a number of morphological characters and their unique adaptations for ovipositing on seeds or fruits and pods containing seeds. They are also known for feigning death by falling from their perch with legs and antennae appressed to the body and head lowered. Approximately 1350 species are known worldwide, with 149 species documented from the United States (Kingsolver, 2002).

The Orsodacnidae consists of 30 species that were formerly placed in two subfamilies of the Chrysomelidae (Clark & Riley, 2002). Four species of orsodacnids are recorded from the United States (Riley et al., 2003).

Although the leaf beetles are one of the most

studied families of Coleoptera, and state level lists have been compiled by many authors (Balsbaugh & Hays, 1972; Downie & Arnett, 1996; Clark, 2000; Riley et al., 2003; Ciegler, 2007; Staines & Staines, 2009), no published systematic studies have been conducted in northern Virginia. This study sought to add to the knowledge of the leaf beetle fauna by compiling records, documented with a voucher specimen, from various studies conducted in the George Washington Memorial Parkway (GWMP), a national park in northern Virginia, and to determine whether any federally or state-listed rare, threatened or endangered leaf beetles occur within the study site. Currently, only one chrysomelid species (*Calligrapha pnirsa* Stål) is listed as rare in Virginia (Roble, 2013). This park includes areas along the Potomac River Gorge, an area noted for its biodiversity and regionally rare species (Evans, 2008).

STUDY SITE

The study site includes approximately 850 ha of lands managed by the National Park Service as units of the George Washington Memorial Parkway at Great Falls Park, Turkey Run Park, Dyke Marsh Wildlife Refuge, and Little Hunting Creek, Fairfax County, Virginia (Fig 1). Great Falls and Turkey Run parks fall within the Piedmont physiographic province while Dyke Marsh and Little Hunting Creek are on the Coastal Plain. All sites are situated along the shore of the Potomac River, and Great Falls and Turkey Run parks border the Potomac River Gorge. Most of the study sites are dominated by maturing, second growth, deciduous woodlands, but more open, herbaceous-dominated habitats can be found in narrow bands along the Potomac River and at Dyke Marsh. The vascular flora of the GWMP is diverse, with 1,313 taxa recorded, 1,020 from Great Falls Park alone (Steury et al., 2008; Steury, 2011).

MATERIALS AND METHODS

The number of chrysomelid species documented from GWMP has grown since the first inventories targeting this family occurred in Turkey Run Park on two days in 1985 and 1986, when 14 species were recorded. This was followed by 14 days of chrysomelid survey effort conducted in 2005 and 2006 in Great Falls and Turkey Run parks, which documented 70 species. Survey methods for the 2005-2006 study consisted entirely of sweeping beetles from foliage with a net and hand picking specimens from plants. Both subsequent and prior to the 2005-2006 inventory, a number of additional studies have added leaf beetle specimens to

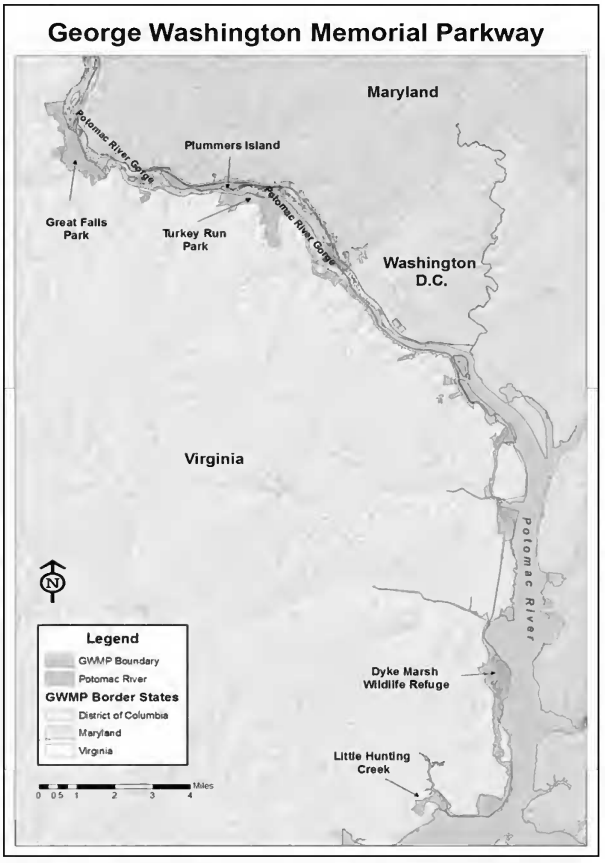

Fig. 1. Location of study sites within the George Washington Memorial Parkway, a unit of the National Park Service, in Fairfax County, Virginia.

the collections from GWMP, primarily as by-catch from studies targeting other arthropods. These include a Bioblitz held on 23-25 June 2006 which documented 19 species (Evans, 2008); a bee inventory at Great Falls Park in 2007 and 2008 utilizing yellow, blue, and white pan traps (Steury et al., 2009); surveys of sawflies, caddisflies, shoreflies, and beetles utilizing six Malaise traps set in Great Falls and Turkey Run parks from 2006 through 2008 (Steiner & Erwin, 2007; Smith, 2009; Flint, 2011; Flint & Kjer, 2011; Mathis & Zatwarnicki, 2012); studies of alderflies, ants, fireflies, and scorpionflies collected at pitfall or Malaise traps run at Dyke Marsh from 1998 through 2003 (Kjar & Barrows, 2004; Barrows et al., 2005, 2008; Barrows & Flint, 2009; Kjar, 2009) and studies targeting beetles captured by hand picking and in pitfall, Lindgren funnel, and blacklight traps set at Great Falls Park, Turkey Run Park, Dyke Marsh Wildlife Refuge, and along Little Hunting Creek in 2010 and 2011. Occasional collections by hand picking were made at other locations within GWMP in Arlington or Fairfax

counties. Specimens were pinned and deposited in the collections maintained at the George Washington Memorial Parkway, Turkey Run Park Headquarters in McLean, Virginia. Nomenclature follows Riley et al. (2003) and Kingsolver (2004). To determine new Virginia records, we reviewed Riley et al. (2003) and Staines & Staines (2009) and conducted searches in collections at the Virginia Museum of Natural History, Martinsville, Virginia (VMNH); National Museum of Natural History, Smithsonian Institution, Washington, DC (NMNH); and collections at Shenandoah National Park, Luray, Virginia and Bull Run Mountains Conservancy, The Plains, Virginia, and the private collection of Arthur V. Evans, Richmond, Virginia. New host plant associations were determined through a comparison of our records with those documented by Clark et al. (2004).

RESULTS

A total of 107 species in 60 genera and three families was documented from GWMP. No species in the family Megalopodidae (sometimes considered a subfamily of the Chrysomelidae) were documented from the study area. This represents 27.7% of the 386 chrysomelid taxa documented from Virginia (Staines & Staines, 2009). At least eight species reported from GWMP are not native to North America. Three native species (*Chaetocnema irregularis*, *Crepidodera bella*, and *Longitarsus alternatus*) were previously undocumented from the Commonwealth.

The 107 leaf beetle species collected from GWMP compares well with numbers listed for some of the most productive sites in adjacent Maryland. These sites include Soldier's Delight Natural Environment Area in Baltimore County (115 species), Green Ridge State Forest in Allegany County (82 species), Patuxent Research Refuge in Howard and Anne Arundel counties (57 species), and Sideling Hill Wildlife Management Area in Washington County (54 species) (Cavey & Staines, unpub. data). Staines (2004, 2008) reported 161 leaf beetle species from Plummers Island in the Potomac River Gorge of Montgomery County, Maryland, based on literature reviews, historical collections, and an inventory in 1997 and 1998, which added 15 species to the known fauna of the island. Collection effort at these five Maryland sites is at least equal to that at GWMP because all locations have been surveyed repeatedly for one or more decades. Thirty-five species documented from GWMP are not known to occur on Plummers Island, nine of which were found only at Dyke Marsh, 33.5 km southeast of Plummers Island and in a different physiographic province. However, 26 species not recorded from Plummers Island were found in Great Falls or Turkey Run parks located along the Potomac River Gorge within 6 km north and south of Plummers Island, respectively. These species bring the total number of chrysomelids documented from the Potomac River Gorge to 187 species. A total of 36 species was found at Dyke Marsh (16 unique to this site), 82 at Great Falls Park (36 unique), and 41 at Turkey Run Park (7 unique). No leaf beetles were captured at Little Hunting Creek where only Lindgren funnel and pitfall traps were used. One species from GWMP was added from Arlington County at Memorial Bridge. Sweeping or beating vegetation with a hand net proved to be the most successful method of capturing leaf beetles during this study, yielding 77 species. Malaise traps captured 63 species, pan traps and blacklight traps caught six species each, and pitfall traps collected three species, while Lindgren funnel traps failed to add any leaf beetles to the study.

Some of the most suitable leaf beetle habitat available at the study sites included two locations at Great Falls Park that were especially productive. Near coordinates N38° 59.680′ W77° 15.060′, the Central Appalachian Riverside Outcrop Prairie (sensu Steury et al., 2008) adjacent to the Potomac River harbors a diverse flora from which 15 leaf beetle species were taken. At the northern end of Great Falls Park (N39° 00.325′ W77° 15.336′), a hillside seep creates a small open wet meadow just west of an adjacent trail where 13 leaf beetle species were collected.

Most of the leaf beetle species known from GWMP have wide north-south ranges within their eastern United States distributions. However, two species collected in Great Falls Park are uncommon in the Mid-Atlantic area. Although recorded from a number of West Virginia counties by Clark (2000), *Capraita thyamoides* was known from only a few specimens at two locations in Maryland (Cavey & Staines, unpub. data) and was not listed for Virginia by Riley et al. (2003) or Staines & Staines (2009). *Crepidodera bella* was formerly known from coastal states between Texas and South Carolina until it was recently recorded from Maryland (Parry, 1986; Seago & Lingafelter, 2003) and North Carolina (Staines & Staines, 2009). Taken on its known *Salix* (willow) host during the survey, this collection of *C. bella* represents the first record from Virginia.

A species of *Calligrapha,* collected at Turkey Run Park by shaking branches of *Tilia americana* L. (basswood) in August 1985 and May 1986, is the most interesting leaf beetle taken from the park to date. These specimens closely resemble *Calligrapha scalaris* (LeConte), a species restricted to elm. Brown (1945) described several species similar to *C. scalaris* that have basswood as host, including *C. tiliae* Brown, *C.*

virginea Brown, and *C. amator* Brown, all recorded only from eastern Canada (Riley et al., 2003). The four biological species are quite difficult to separate, except perhaps in series and with a known host (Brown, 1945). Given this difficulty, this record from Virginia and similar observations recorded from West Virginia and Ohio (Clark, 2000), it is likely that members of this species complex (other than *C. scalaris*) occur in much of the United States but were either not reported or confused with *C. scalaris*. Repeated efforts to locate a population of this species during subsequent surveys at Turkey Run Park proved unsuccessful.

The genus *Longitarsus* has been in dire need of revision for at least 40 years. We used Horn (1889), Duckett (1920), and comparisons with identified specimens to identify the species reported here. The biology of the specimen reported as *Paria* n. sp. is important to its yet unpublished description. *Sumitrosis* sp. near *rosea* differs from *S. rosea* by its variable morphological characters and host plant preference. The *Psylliodes* sp. ♀ (*convexior* LeConte or *punctulatus* Melsheimer) and ♀ *Donacia subtilis* Kunze/*D. fulgens* LeConte complex can only be definitively distinguished based on male characters. All specimens collected of the latter two taxa were females.

LIST OF SPECIES

Nomenclature follows Riley et al. (2003) and families and species are listed alphabetically. Twenty-six species previously unrecorded from the Potomac River Gorge are marked with an asterisk (*). Eight species non-native to North America are signified with an exclamation point (!). Species are designated as rare (R) if 1-5 specimens were collected or observed, uncommon (U) for 6-12 specimens, and common (C) if more than 12 specimens were found. Sites where specimens were collected are given as Dyke Marsh Wildlife Preserve (DM), Great Falls Park (GF), or Turkey Run Park (TR). Others sites are spelled out as needed. The earliest and latest dates of collection are given for each species using three letter acronyms for the month. For trap sets over multiple weeks (rarely more than 14 days) the first day of the set is used as the earliest date and the last day of the set for the latest date. Collection methods are listed using the following abbreviations: black UV light (BL), sweep netting, beating sheets, and hand captures (HN), Malaise trap (MT), pan trap (PT), or pitfall trap (PF). Host plant associations are given when known.

BRUCHIDAE (Bean Weevils)

Acanthoscelides alboscutellatus (Horn) – U; DM; 19 Apr–28 Aug; MT

Althaeus hibisci (Olivier) – R; DM; 23 Jul–8 Aug; MT

Gibbobruchus mimus (Say) – R; GF; 16 Jul–3 Oct; BL, HN, MT. Collected on *Solidago bicolor* L.

Megacerus discoideus (Say) – R; DM; 14 Jun–9 Aug; MT

CHRYSOMELIDAE (Leaf Beetles)

Acallepitrix nitens (Horn) – R; GF, TR; 29 May–29 Jul.; HN

Acalymma vittatum (F.) – R; GF, TR; 5 Sep–21 Oct; HN, MT

Altica chalybea Illiger – C; DM, GF, TR; 10 Apr–21 Oct; HN, MT. Collected on *Vitis* sp., a known host.

Altica kalmiae Melsheimer – U; GF, TR; 14 Apr–20 Jul; HN, MT. Collected on *Kalmia latifolia* L.

**Altica litigata* Fall – R; GF, TR; 27 Apr–23 Aug; HN

Altica sp. *ignita* group – R; GF; 23 Jun; BL

**Anisostena nigrita* (Olivier) – R; GF; 6 Jun–16 Aug; HN. Collected on flowers of *Pycnanthemum tenuifolium* Schrad., an association not noted by Clark et al. (2004). Also swept from *Andropogon* sp., a reported adult association (Clark et al., 2004).

Baliosus nervosus (Panzer) – C; GF, TR; 10 May–16 Aug; HN, MT. Locally numerous, feeding on and mining (larvae) the leaves of *Tilia americana* L.

Bassareus mammifer (Newman) – R; TR; 24 June; HN

Brachypnoea clypealis (Horn) – C; GF, TR; 24 Jun–17 Aug; HN, MT

Brachypnoea tristis (Olivier) – R; GF; 15 Jul–29 Jul; HN

Calligrapha sp. near *scalaris* (LeConte) – R; TR; 28 Apr–12 May; HN, PF

Capraita obsidiana (F.) – R; DM, GF; 10 May–21 Oct; HN, MT

Capraita sexmaculata (Illiger) – R; DM, GF, TR; 10 May–29 Jul; HN, MT

**Capraita thyamoides* Crotch – U; GF; 9 Apr–23 Jul; HN, MT, PT

*!*Cassida rubiginosa* Müller – R; GF; 6 Jun; HN. Collected on *Carduus* sp., a known host.

Ceratoma trifurcata (Forster) – R; GF; 10–18 May; HN. Swept from an unidentified wild bean vine displaying typical adult feeding damage; this species feeds on numerous members of the Fabaceae (Clark et al., 2004).

Chaetocnema confinis Crotch – R; GF; 12–27 Apr; HN

Chaetocnema denticulata (Illiger) – R; GF, TR; 10 May–21 Oct; HN, MT. Handpicked from turf grass duff on 30 August.

Chaetocnema irregularis* LeConte – C; GF; 12 Apr–15 Jul; HN. Clark et al. (2004) associated this species with *Carex* and, to a lesser extent, *Scirpus* and *Juncus*. One or more of these plant genera occur at the northern portion of GF where this species was collected in numbers by sweeping. **NEW STATE RECORD

**Chaetocnema minuta* Melsheimer – R; GF; 9 Apr–12 Jul; PT

Chaetocnema pulicaria Melsheimer – U; DM; 12 Apr–5 Dec; MT

Chaetocnema quadricollis Schwarz – R; DM; 11 Apr; MT

**Chaetocnema truncata* White – R; GF; 23 Jun; BL

Chalepus bicolor (Olivier) – U; GF; 1 May–16 Aug; HN, MT

**Charidotella purpurata* (Boheman) – C; DM, GF; 19 Apr–18 July; HN, MT

Charidotella sexpunctata bicolor (F.) – C; DM, GF, TR; 28 May–8 Aug; HN, MT

Chrysochus auratus (F.) – R; GF; 8–9 Aug; HN. Netted on *Apocynum sibiricum* Jacq.

Colaspis brunnea (F.) – R; GF, TR; 12 Apr–20 Jul; HN, MT

Crepidodera bella* Parry – R; GF; 16 Aug; HN. This species has only been confirmed on *Salix nigra* Marshall (Clark et al., 2004), but the common willow at the site of this collection is *S. caroliniana* Michx., although *S. humilus* Marshall is also present. **NEW STATE RECORD

Crepidodera browni Parry – R; GF; 7 Jun–16 Aug; HN. Reported only on *S. nigra* and *S. fragilis* L. (Clark et al., 2004), but collected in an area where only *S. caroliniana* and *S. humilus* are present.

Crepidodera nana (Say) – R; DM; 11–25 Apr; MT

**Crepidodera violacea* Melsheimer – R; DM, GF; 19 Apr–21 Oct; MT

Cryptocephalus mutabilis Melsheimer – R; GF; 23 Jul; HN

**Cryptocephalus quadruplex* Newman – R; GF, TR; 18 May–7 Jun; HN

Deloyala guttata (Olivier) – C; DM, GF; 23 May–8 Aug; HN, MT

**!Demotina modesta* Baly – U; GF; 16 Jun–21 Oct; HN, MT. In North America, this beetle has only been associated with *Quercus nigra* L. (Clark et al., 2004), an oak not among the 13 *Quercus* species found in Great Falls Park (Steury et al., 2008).

Diabrotica undecimpunctata howardi Barber – U; DM, GF; 14 Jun–11 Oct; BL, MT

Diabrotica virgifera Horn – R; DM; 23 Jul–4 Aug; MT

Dibolia borealis Chevrolat – R; GF, TR; 12 Apr–4 Aug; HN, MT

Disonycha admirabila Blatchley – R; Fairfax County, Collingwood Picnic Area; 16 Sep; HN. Collected in duff of turf grass.

Disonycha glabrata (F.) – R; GF, TR; 7 Jun–17 Aug; HN, MT. This species was collected in Turkey Run Park on *Amaranthus blitum* L., which can be added to the long list of other *Amaranthus* species listed by Clark et al. (2004) as hosts for this beetle.

Disonycha uniguttata (Say) – R; DM; 18 Jul–15 Aug; MT

Disonycha xanthomelas (Dalman) – R; TR; 7–21 Jul; MT

**Donacia biimpressa* Melsheimer – R; GF; 27 Apr–10 May; HN

**Donacia caerulea* Olivier – C; DM, GF; 11 Apr–21 Nov; HN, MT

Donacia fulgens LeConte – R; DM; 17–28 May; MT

Donacia piscatrix Lacordaire – U; DM; 10 May–12 Sep; HN, MT. Collected on *Nuphar lutea* (L.) Sm. ssp. *advena* (Ait.) Kartesz & Gandhi.

Donacia sp. ♀, *subtilis* Kunze / *fulgens* LeConte complex – R; DM; 12 Apr–18 July; MT

Epitrix brevis Schwarz – C; GF, TR; 10 May–7 Jun; HN. Collected in numbers on *Datura stramonium* (L.), a known host.

Epitrix fuscula Crotch – R; GF; 10 May–7 Jun; HN

**Exema canadensis* Pierce – R; GF; 9 Apr–16 Aug; HN, PT

Exema dispar (Lacordaire) – R; GF; 6 Jun; HN

Fidia longipes (Melsheimer) – C; DM, GF, TR; 19 Jun–1 Aug; HN, MT

Fidia viticida Walsh – C; DM, GF, TR; 24 Jun–8 Aug; MT

!Galerucella nymphaeae (L.) – C; DM; 7 July–15 Aug; MT. This species entirely skeletonized patches of *Nuphar lutea* (L.) Sm. ssp. *advena* (Ait.) Kartesz & Gandhi as large as 25 m x 25 m in Dyke Marsh in 2010.

**!Graphops curtipennis* (Melsheimer) – R; GF, TR; 10–29 May; HN. Swept from *Hypericum* sp.

†Hornaltica atriventris (Melsheimer) – R; DM, GF; 12 Apr–21 Oct; MT

**Kuschelina fallax* (Melsheimer) – R; GF; 6 Jun–23 Jul; HN. Clark et al. (2004) listed *Agalinis fasciculata* (S. Ell.) Raf. and *A. strictifolia* (Benth.) Penn as known hosts for this species. Neither of these species are known from GWMP, however *A. purpurea* (L.) Pennellis is common at the site where this beetle was collected and is likely serving as its host plant.

Kuschelina gibbitarsa (Say) – U; GF, TR; 10 Apr–21 Jul; HN, MT

Kuschelina vians (Illiger) – R; GF; 27 Apr; HN

Labidomera clivicollis Kirby – R; Arlington County, Memorial Bridge; 8 Jun; HN. Collected on *Ilex opaca* Aiton (not feeding). Known hosts are in the Asclepiadaceae.

Lema trivittata Say – C; GF; 15 Jul–16 Aug; HN. Collected in numbers on *Datura stramonium* (L.), a known host.

Longitarsus alternatus* Ziegler – C; GF, TR; 10 Apr–17 Jul; HN, MT, PT. **NEW STATE RECORD

**Longitarsus* sp. near *arenaceus* Blatchley – R; GF; 12 Apr; HN

**Longitarsus testaceus* Melsheimer – R; GF; 10 May; HN

**Longitarsus turbatus* Horn – R; GF; 10 May; HN

**Microrhopala vittata* (F.) – R; GF, TR; 14–26 Jul; HN, MT

Neochlamisus bebbianae (Brown) – R; GF, TR; 14 Apr–6 Jun; HN

Neolema sexpunctata (Olivier) – R; GF; 31 Jun–17 Jul; MT. Collected sweeping *Commelina*, a known host.

Octotoma plicatula (F.) – R; GF; 7 Jun–15 Jul; HN. Adult collected on *Campsis radicans* (L.) Seem *ex* Bureau, the known larval host.

Odontota dorsalis (Thunberg) – U; GF, TR; 1 May–21 Jul; HN, MT

Odontota mundula (Sanderson) – C; GF, TR; 10 May–21 Jul; HN, MT. Collected sweeping *Amphicarpaea bracteata* (L.) Fernald, a known host.

Odontota scapularis (Olivier) – R; GF, TR; 10 May–24 Jun; HN

!Oulema melanopus (Linnaeus) – U; DM, GF; 19 Apr–7 Jul; HN, MT

**Oulema palustris* (Blatchley) – R; GF; 10 May–6 Jun; HN

Oulema sayi (Crotch) – R; TR; 23 Jul; HN

Pachybrachis femoratus (Olivier) – R; GF; 16 Aug; HN

Paria fragariae Wilcox – C; DM, GF, TR; 12 Apr–16 Aug; BL, HN, MT

Paria n. sp. – R; GF; 7 Jun; HN

**Paria quadriguttata* LeConte – R; TR; 1–20 May; MT

Paria quadrinotata (Say) – U; DM, GF, TR; 10 Apr–9 Aug; HN, PF, MT

Phyllobrotica limbata (F.) – R; GF; 3–17 Jun; HN, MT

Phyllotreta bipustulata (F.) – R; GF; 27 Apr–18 May; HN

Phyllotreta liebecki Schaeffer – R; DM, GF; 27 Apr–2 Jul; HN, MT

!Phyllotreta striolata (F.) – R; DM, TR; 18 Mar–10 May; MT

!Phyllotreta zimmermani (Crotch) – R; DM; 19–28 Apr; MT

**!Plagiodera versicolor* (Laicharting) – R; DM, GF; 8 May–7 Jun; HN, MT. Collected on *Salix*.

Plagiometriona clavata (F.) – U; DM, GF, TR; 19 Jun–8 Aug; MT

Plateumaris shoemakeri (Schaeffer) – U; DM; 12 Apr–20 Jun; MT

Plateumaris rufa (Say) – R; DM; 6–20 Jun; MT

**Prasocuris vittata* (Olivier) – R; GF; 12 Apr–10 May; HN. Clark et al. (2004) reported *Ranunculus acris* L. and possibly *R. repens* as hosts for this beetle, but neither of these two species occurs in Great Falls Park, thus *P. vittata* is likely using one of the other nine species of *Ranunculus* documented from the park by Steury et al. (2008).

Psylliodes sp. ♀ (*convexior* LeConte or *punctulatus* Melsheimer) – R; DM; 21 Nov–5 Dec; MT

Rhabdopterus picipes (Olivier) – U; DM, GF, TR; 19 Jun–23 July; HN, MT

Rhabdopterus praetextus (Say) – C; DM, GF, TR, 28 May–9 Aug; HN, MT

Saxinis omogera (Lacordaire) – R; GF; 22 May–7 Jun; HN, PT

Stenispa metallica (F.) – R; GF; 27 Apr–23 Sep; HN. Swept from *Scirpus* and *Carex* sedges in wet areas.

Sumitrosis inaequalis (Weber) – C; GF, TR; 9 Apr–4 Aug; HN, MT, PT. Collected mating on *Solidago* sp., a known host.

Sumitrosis rosea (Weber) – U; GF, TR; 10 May–21 Oct; HN, MT

Sumitrosis sp. near *rosea* – R; TR; 18 May–4 Aug; HN, MT. A species similar to *S. rosea* (Weber), collected on *Laportea* sp.

Systena elongata (F.) – R; DM, TR; 25 Apr–19 Aug; PT, MT

Tymnes tricolor (F.) – U; GF, TR; 15 May–21 Jul; BL, HN, MT

ORSODACNIDAE (Ravenous Leaf Beetles)

Orsodacne atra (Ahrens) – R; GF; 18 Mar–9 Apr; MT

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LITERATURE CITED

Balsbaugh, E. U., & K. L. Hays. 1972. Leaf beetles of Alabama. Auburn University Agricultural Experiment Station Bulletin 441: 1-223.

Barrows, E. M., S. B. Arsenault, & N. P. Grenier. 2008. Firefly (Coleoptera: Lampyridae) flight periods, sex ratios, and habitat frequencies in a United States Mid-Atlantic freshwater tidal marsh, low forest, and their ecotone. Banisteria 31: 47-52.

Barrows, E. M., & O. S. Flint, Jr. 2009. Mecopteran (Mecoptera: Bittacidae, Meropeidae, Panorpidae) flight periods, sex ratios, and habitat frequencies in a United States Mid-Atlantic freshwater tidal marsh, low forest, and their ecotone. Journal of the Kansas Entomological Society 82: 223-230.

Barrows, E. M., A. M. McIntyra, & O. S. Flint, Jr. 2005. Alderfly (Neuroptera: Sialidae) flight periods, sex ratios, and habitat use in a Virginia freshwater tidal marsh, low forest, and their ecotones. Proceedings of the Entomological Society of Washington 107: 693-699.

Brown, W. J. 1945. Food plants and distribution of the species of *Calligrapha* in Canada, with descriptions of new species (Coleoptera, Chrysomelidae). Canadian Entomologist 77: 117-133.

Ciegler, J. C. 2007. Leaf and Seed Beetles of South Carolina (Coleoptera: Chrysomelidae and Orsodacnidae). Biota of South Carolina. Volume 5. Clemson University, Clemson, SC. 246 pp.

Clark, S. M. 2000. An annotated list of the leaf beetles of West Virginia (Coleoptera: Orsodacnidae, Megalopodidae, Chrysomelidae exclusive of Bruchinae). Occasional Publications of the West Virginia Department of Agriculture No. 1. Charleston, WV. 93 pp.

Clark, S. M., D. G. LeDoux, T. N. Seeno, E. G. Riley, A. J. Gilbert, & J. M. Sullivan. 2004. Host plants of leaf beetle species occurring in the United States and Canada (Coleoptera: Megalopodidae, Orsodacnidae and Chrysomelidae exclusive of Bruchinae). Coleopterists Society Special Publication No. 2. Sacramento, CA. 476 pp.

Clark, S. M., & E. G. Riley. 2002. Orsodacnidae Thompson 1859. Pp. 613-616 *In* R. H. Arnett, Jr., M. C. Thomas, P. E. Skelley, & J. H. Frank (eds.), American Beetles, Volume 2, Polyphaga: Scarabaeoidea through Curculionoidea. CRC Press, Boca Raton, FL.

Downie, N. M., & R. H. Arnett. 1996. The Beetles of Northeastern North America, Volume II. The Sandhill Crane Press, Gainesville, FL. 1,721 pp.

Duckett, A. B. 1920. Annotated list of Halticini. University of Maryland Agricultural Experiment Station Bulletin 241: 112-155.

Evans, A. V. (ed.). 2008. The 2006 Potomac Gorge Bioblitz. Overview and results of a 30-hour rapid biological survey. Banisteria 32: 3-80.

Flint, O. S., Jr. 2011. Trichoptera from Great Falls and Turkey Run units of the George Washington Memorial Parkway, Fairfax Co., Virginia, USA. Zoosymposia 5: 101-107.

Flint, O. S., Jr., & K. M. Kjer. 2011. A new species of *Neophylax* from northern Virginia, USA (Trichoptera: Uenoidae). Proceedings of the Entomological Society of Washington 113: 7-13.

Greatorex-Davies, J. N., T. H. Sparks, & M. L. Hall. 1994. The response of Heteroptera and Coleoptera species to shade and aspect in rides of coniferous lowland woods in southern England. Biological Conservation 67: 255-273.

Horn, G. H. 1889. A synopsis of the Halticini of Boreal America. Transactions of the American Entomological Society 16: 163-320.

Jolivet, P. 1988. Food habits and food selection of Chrysomelidae. Bionomic and volutionary perspectives. Pp. 1-24 *In* P. Jolivet, E. Petitpierre, & T. H. Hsiao (eds.), Biology of Chrysomelidae. Kluwer Academic Publishers, Dordrecht, Netherlands.

Kingsolver, J. M. 1995. On the family Bruchidae. Chrysomela 30: 3.

Kingsolver, J. M.. 2002. Bruchidae Latreille 1802. Pp. 602-608 *In* R. H. Arnett, Jr., M. C. Thomas, P. E. Skelley, & J. H. Frank (eds.), American Beetles, Volume 2, Polyphaga: Scarabaeoidea through Curculionoidea. CRC Press, Boca Raton, FL.

Kingsolver, J. M. 2004. Handbook of the Bruchidae of the United States and Canada (Insecta, Coleoptera), Volume I. United States Department of Agriculture Technical Bulletin No. 1912. Beltsville, MD. 324 pp.

Kjar, D. 2009. The ant community of a riparian forest in the Dyke Marsh Preserve, Fairfax County, Virginia, and a checklist of Mid-Atlantic Formicidae. Banisteria 33: 3-17.

Kjar, D., & E. M. Barrows. 2004. Arthropod community heterogeneity in a Mid-Atlantic forest highly invaded by alien organisms. Banisteria 23:26-37.

Lopatin, I. P. 1977. Leaf beetles (Chrysomelidae) of central Asia and Kazakhstan. Keys to the fauna of the USSR 13. Academy of Science of the Union of Soviet Socialist Republics, Institute of Zoology. Leningrad, Russia.

Masashi O., & T. Nagaike. 2006. Influence of forest types and effects of forestry activities on species richness and composition of Chrysomelidae in the Central Mountainous Region of Japan. Biodiversity and Conservation 15: 1179-1191.

Mathis, W. N., & T. Zatwarnicki. 2012. Revision of New World species of the shorefly subgenus *Allotrichoma* Becker of the genus *Allotrichoma* with description of the subgenus *Neotrichoma* (Diptera, Ephydridae, Hecamedini). ZooKeys 161: 1-101.

Parry, R. H. 1986. The systematics and biology of the flea beetle genus *Crepidodera* Chevrolat (Coleoptera: Chrysomelidae) in America north of Mexico. Insecta Mundi 1: 156-196.

Riley, E. G., S. M. Clark, R. W. Flowers, & A. J. Gilbert. 2002. Chrysomelidae Latreille 1802. Pp. 617-691 *In* R. H. Arnett, Jr., M. C. Thomas, P. E. Skelley, & J. H. Frank (eds.), American Beetles, Volume 2, Polyphaga: Scarabaeoidea through Curculionoidea. CRC Press, Boca Raton, FL.

Riley, E. G., S. M. Clark, & T. N. Seeno. 2003. Catalog of the leaf beetles of America north of Mexico (Coleoptera: Megalopodidae, Orsodacnidae and Chrysomelidae exclusive of Bruchinae). Coleopterists Society Special Publication No. 1. Sacramento, CA. 290 pp.

Roble, S. M. 2013. Natural heritage resources of Virginia: rare animal species. Natural Heritage Technical Report 13-05. Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, VA. 46 pp.

Seago, A., & S. W. Lingafelter. 2003. Discovery of *Crepidodera bella* Parry (Coleoptera: Chrysomelidae: Alticini) in Maryland and redescription. Journal of the New York Entomological Society 11: 51-56.

Smith, D. R. 2009. An obscure sawfly, *Kerita fidala* Ross (Hymenoptera: Tenthredinidae), new to Virginia, a leafminer of Virginia bluebell, *Mertensia virginica* (L.) Pers. ex Link (Boraginaceae). Banisteria 33: 53.

Staines, C. L. 2004. Changes in the chrysomelid community (Coleoptera) over a ninety-five year period on a Maryland river island. Pp. 613-622 *In* P. Jolivet, J. A. Santiago-Blay, & M. Schmitt, (eds.), New Contributions to the Biology of Chrysomelidae. SPB Academic Publishing, The Hague, Netherlands.

Staines, C. L. 2008. Chrysomelidae or leaf beetles (Insecta: Coleoptera) of Plummers Island, Maryland. Pp. 141-144, 198-199 *In* J. W. Brown (ed.), The invertebrate fauna of Plummers Island, Maryland, Contribution XXX to the Natural History of Plummers Island, Maryland. Bulletin of the Biological Society of Washington 15.

Staines, C. L., & S. L. Staines. 2009. The Chrysomelidae (Insecta: Coleoptera) of the Mid-Atlantic States. Pp. 341-363 *In* S. M. Roble & J. C. Mitchell (eds.), A Lifetime of Contributions to Myriapodology and the Natural History of Virginia: A Festschrift in Honor of Richard L. Hoffman's 80th Birthday. Virginia Museum of Natural History Special Publication No. 16, Martinsville, VA.

Steiner, W. E., & T. L. Erwin. 2007. *Phloeoxena signata* (Dejean): northern range extensions to Maryland and Tennessee, U.S.A., and the first record for Costa Rica (Coleoptera: Carabidae). Coleopterists Bulletin 61: 224-226.

Steury, B. W. 2011. Additions to the vascular flora of the George Washington Memorial Parkway, Virginia, Maryland, and the District of Columbia. Banisteria 37: 3-20.

Steury, B. W., S. W. Droege, & E. T. Oberg. 2009. Bees (Hymenoptera: Anthophila) of a riverside outcrop prairie in Fairfax County, Virginia. Banisteria 34: 17-24.

Steury, B. W., G. P. Fleming, & M. T. Strong. 2008. An emendation of the vascular flora of Great Falls Park, Fairfax County, Virginia. Castanea 73: 123-149.